```
     (FILE 'HOME' ENTERED AT 16:09:52 ON 01 NOV 2006)

     FILE 'REGISTRY' ENTERED AT 16:09:58 ON 01 NOV 2006
L1             STRUCTURE UPLOADED
L2           0 S L1 SSS SAM
L3           6 S L1 SSS FULL
L4             STRUCTURE UPLOADED
L5           0 S L4 SSS SAM
L6           0 S L4 SSS FULL

     FILE 'CAPLUS' ENTERED AT 16:11:25 ON 01 NOV 2006
L7           6 S L3
L8           2 S L7 AND (FUSOGEN? OR MEMBRANE OR (DRUG(W)DELIVERY) OR PHARMACO

     INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
     AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
     CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
     DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 17:20:43 ON 01 NOV 2006
              SEA (CLUSTER(W)GLYCOSIDE) AND GALACTOSAMINE
              ---------
              2    FILE CAPLUS
              1    FILE ESBIOBASE
              6    FILE GENBANK
              1    FILE SCISEARCH
              5    FILE USPATFULL
              2    FILE USPAT2
L9             QUE (CLUSTER(W) GLYCOSIDE) AND GALACTOSAMINE
              ---------

     FILE 'USPATFULL' ENTERED AT 17:21:37 ON 01 NOV 2006
L10          5 S (CLUSTER(W)GLYCOSIDE) AND GALACTOSAMINE

     INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
     AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
     CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
     DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 17:22:41 ON 01 NOV 2006
              SEA (CLUSTER(W)GLYCOSIDE) AND (N-ACETYLGALACTOSAMINE)
              ---------
              4    FILE BIOSIS
              1    FILE BIOTECHNO
              7    FILE CAPLUS
              1    FILE DDFU
              1    FILE DRUGU
              4    FILE EMBASE
              4    FILE ESBIOBASE
              3    FILE GENBANK
              4    FILE MEDLINE
              1    FILE PASCAL
              7    FILE SCISEARCH
              1    FILE USPATFULL
              1    FILE USPAT2
L11            QUE (CLUSTER(W) GLYCOSIDE) AND (N-ACETYLGALACTOSAMINE)
              ---------

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE' ENTERED AT 17:23:49 ON 01 NOV 2006
L12         19 S (CLUSTER(W)GLYCOSIDE) AND (N-ACETYLGALACTOSAMINE)
L13          7 DUP REM L12 (12 DUPLICATES REMOVED)

=>
```

=> file registry
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 16:09:58 ON 01 NOV 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 31 OCT 2006 HIGHEST RN 911785-87-0
DICTIONARY FILE UPDATES: 31 OCT 2006 HIGHEST RN 911785-87-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

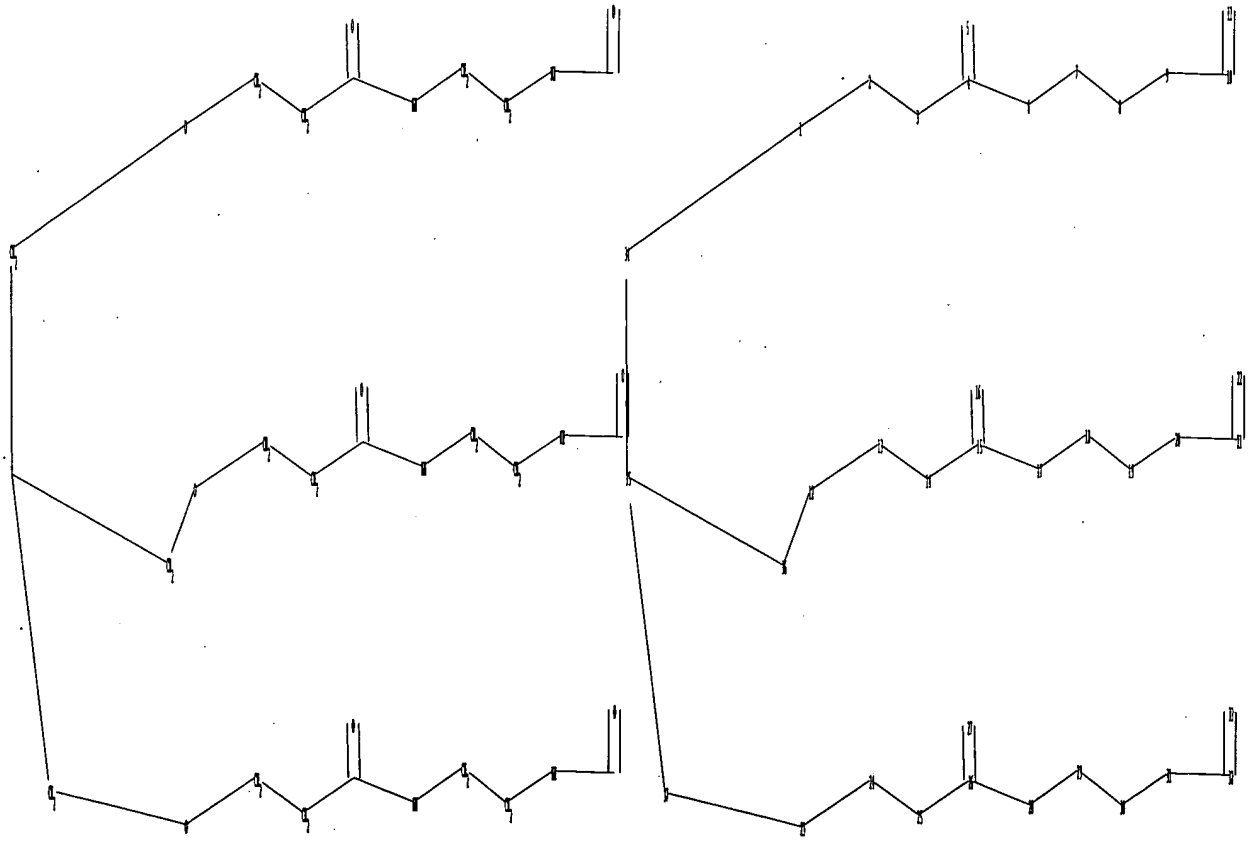
TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

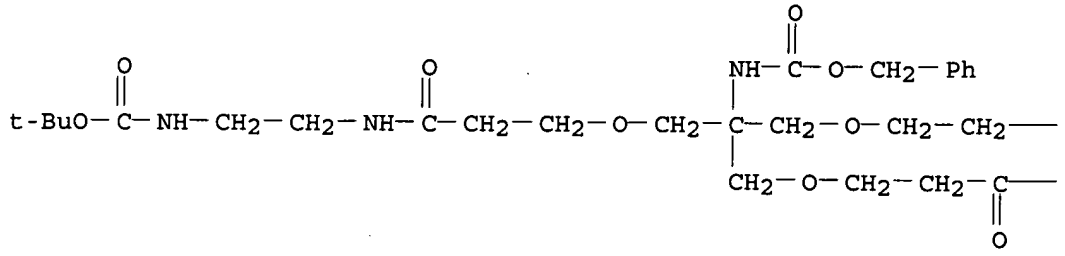
=>
Uploading C:\Program Files\Stnexp\Queries\10780447c.str



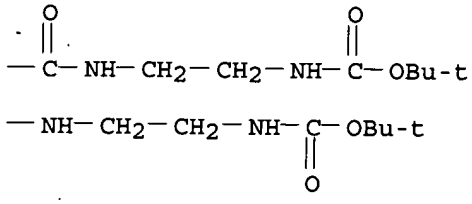
```
chain nodes :
1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23
24  25  26  27  28  29  30  31  32  33  34  35  36  37
chain bonds :
1-2  1-34  2-3  3-4  4-5  4-6  6-7  7-8  8-9  9-10  10-11  12-13  12-36  13-14
14-15
15-16  15-17  17-18  18-19  19-20  20-21  21-22  23-24  23-37  24-25  25-26  26-27
26-28  28-29
29-30  30-31  31-32  32-33  34-35  35-36  35-37
exact/norm bonds :
4-5  4-6  9-10  10-11  15-16  15-17  20-21  21-22  26-27  26-28  31-32  32-33
exact bonds :
1-2  1-34  2-3  3-4  6-7  7-8  8-9  12-13  12-36  13-14  14-15  17-18  18-19  19-20
23-24  23-37  24-25  25-26  28-29  29-30  30-31  34-35  35-36  35-37


G1:H

Match level :
1:CLASS  2:CLASS  3:CLASS  4:CLASS  5:CLASS  6:CLASS  7:CLASS  8:CLASS  9:CLASS
10:CLASS  11:CLASS  12:CLASS  13:CLASS  14:CLASS  15:CLASS  16:CLASS  17:CLASS
18:CLASS  19:CLASS
20:CLASS  21:CLASS  22:CLASS  23:CLASS  24:CLASS  25:CLASS  26:CLASS  27:CLASS
28:CLASS  29:CLASS
30:CLASS  31:CLASS  32:CLASS  33:CLASS  34:CLASS  35:CLASS  36:CLASS  37:CLASS



L1      STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1              STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY -  AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.


=> s l1 sss sam
SAMPLE SEARCH INITIATED 16:10:21 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      833 TO ITERATE

100.0% PROCESSED      833 ITERATIONS                                  0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        14929 TO    18391
PROJECTED ANSWERS:               0 TO        0

L2            0 SEA SSS SAM L1

=> s l1 sss full
FULL SEARCH INITIATED 16:10:24 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    16685 TO ITERATE

100.0% PROCESSED    16685 ITERATIONS                                  6 ANSWERS
SEARCH TIME: 00.00.01

L3            6 SEA SSS FUL L1

=> d l3 scan
```

L3 6 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN 9,13-Dioxa-2,5,17,20-tetraazaheneicosanedioic acid, 11-(12,12-dimethyl-5,10-dioxo-2,11-dioxa-6,9-diazatridec-1-yl)-6,16-dioxo-11-[[(phenylmethoxy)carbonyl]amino]-, bis(1,1-dimethylethyl) ester (9CI)
MF C42 H71 N7 O14

PAGE 1-A



PAGE 1-B

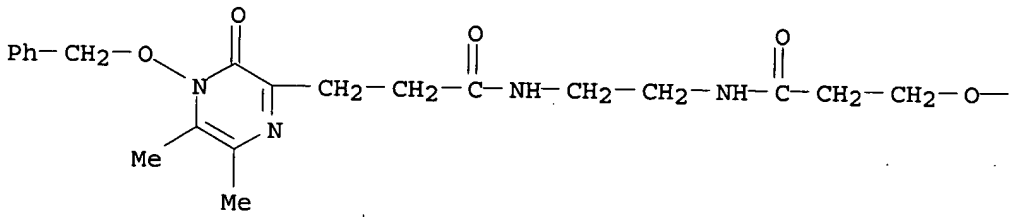


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

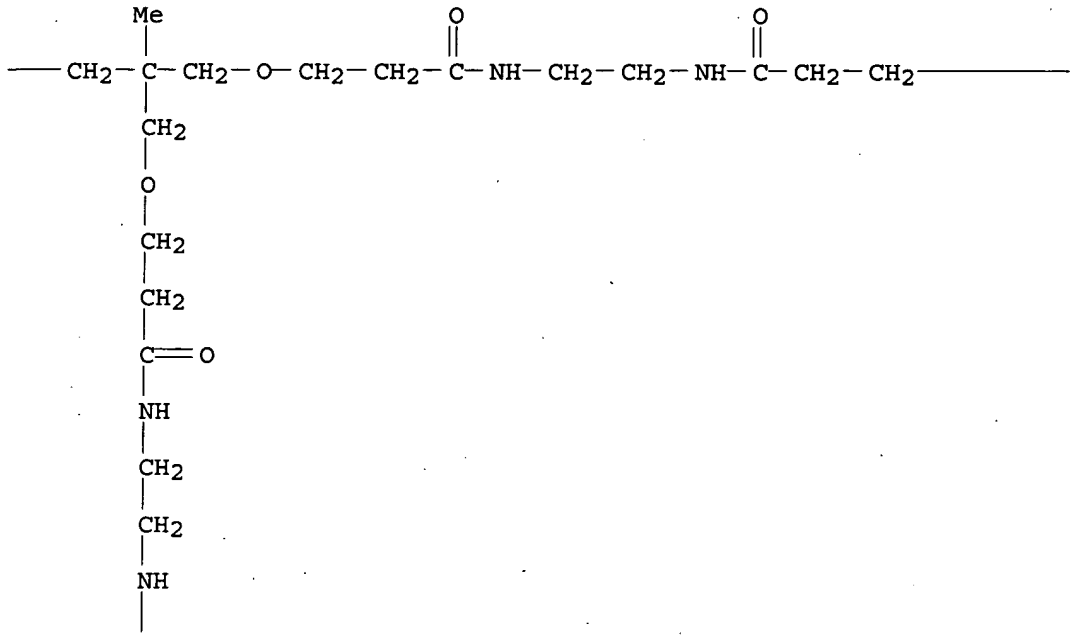
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):5

L3 6 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Pyrazinepropanamide, N,N'-[9-[[3-[[2-[[3-[3,4-dihydro-5,6-dimethyl-3-oxo-4-(phenylmethoxy)pyrazinyl]-1-oxopropyl]amino]ethyl]amino]-3-oxopropoxy]methyl]-9-methyl-4,14-dioxo-7,11-dioxa-3,15-diazaheptadecane-1,17-diyl]bis[3,4-dihydro-5,6-dimethyl-3-oxo-4-(phenylmethoxy)- (9CI)
MF C68 H90 N12 O15

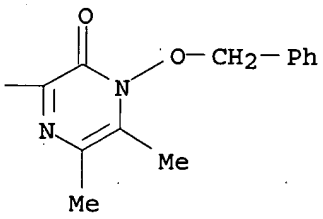
PAGE 1-A



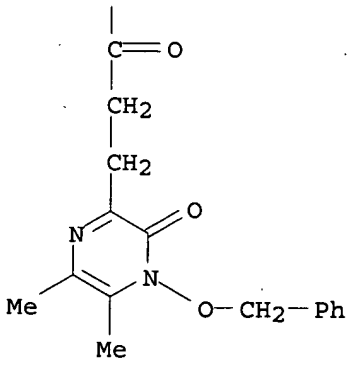
PAGE 1-B



PAGE 1-C



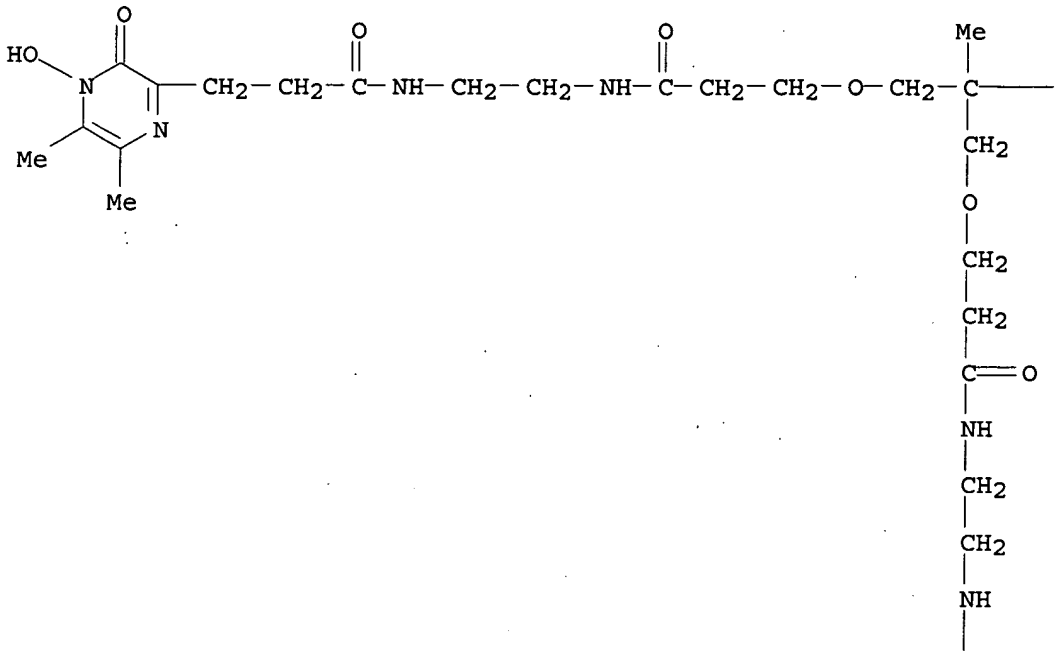
PAGE 2-B



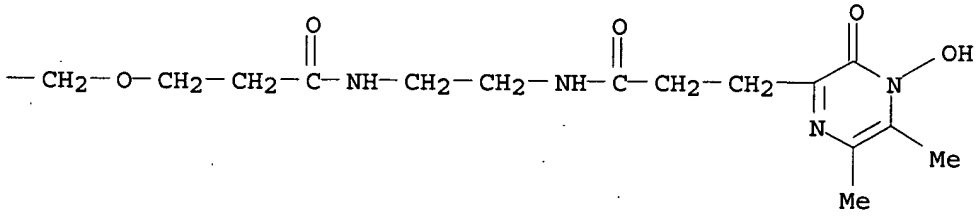
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L3 6 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Pyrazinepropanamide, N,N'-[9-[[3-[[2-[[3-(3,4-dihydro-4-hydroxy-5,6-dimethyl-3-oxopyrazinyl)-1-oxopropyl]amino]ethyl]amino]-3-oxopropoxy]methyl]-9-methyl-4,14-dioxo-7,11-dioxa-3,15-diazaheptadecane-1,17-diyl]bis[3,4-dihydro-4-hydroxy-5,6-dimethyl-3-oxo- (9CI)
MF C47 H72 N12 O15

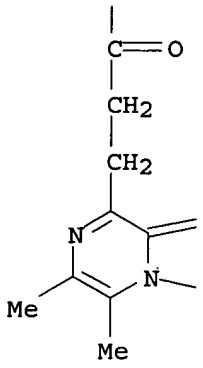
PAGE 1-A



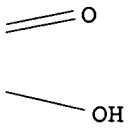
PAGE 1-B



PAGE 2-A



PAGE 2-B

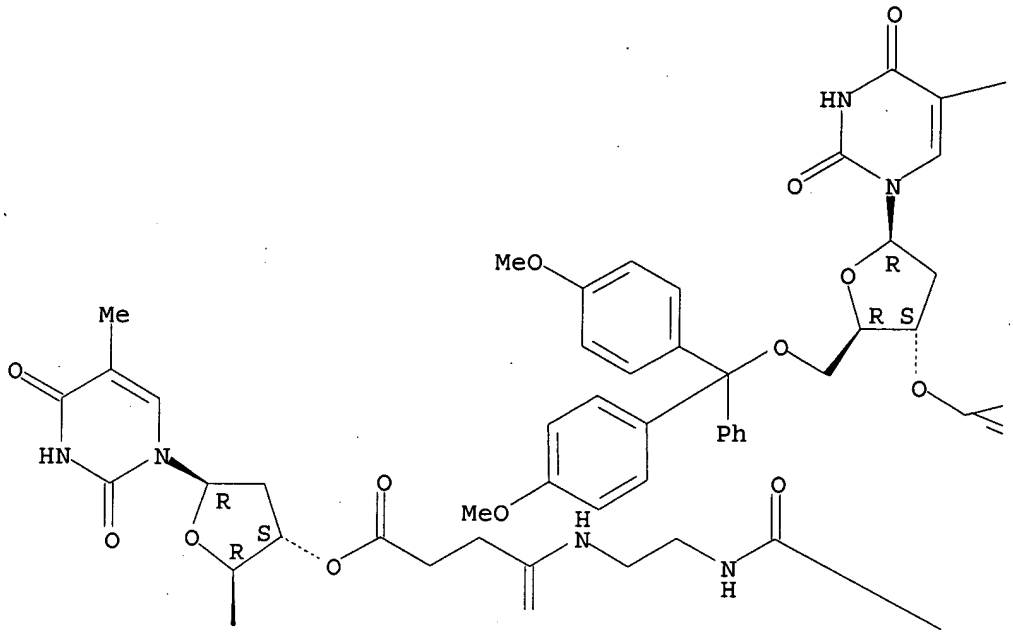


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

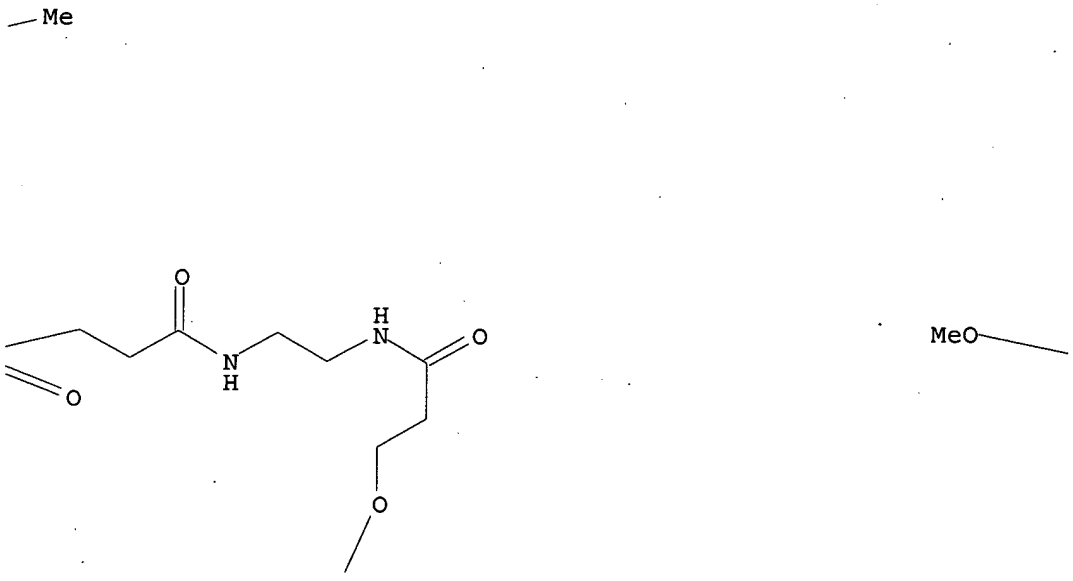
L3 6 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Thymidine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-, 3',3'''-[14,14-[[3-[[2-[(3-carboxy-1-oxopropyl)amino]ethyl]amino]-3-oxopropoxy]methyl]-4,9,19,24-tetraoxo-12,16-dioxa-5,8,20,23-tetraazaheptacosanedioate], 3',3'''-diester with 5'-O-[bis(4-methoxyphenyl)phenylmethyl]thymidine (9CI)
MF C165 H188 N16 O44

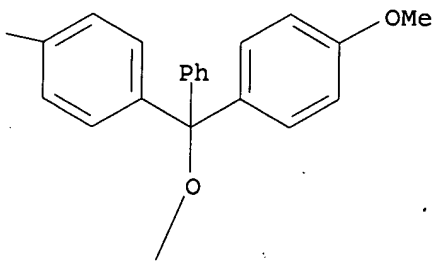
Absolute stereochemistry.

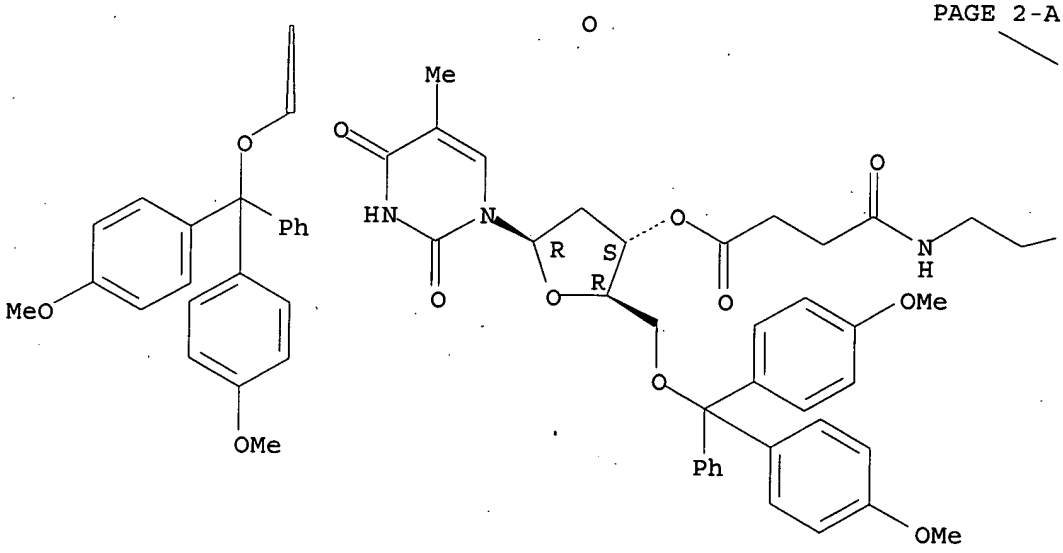
PAGE 1-A



PAGE 1-B




OMe
Ph
O


O
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O
HN
N
O
R
S
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O
O
O
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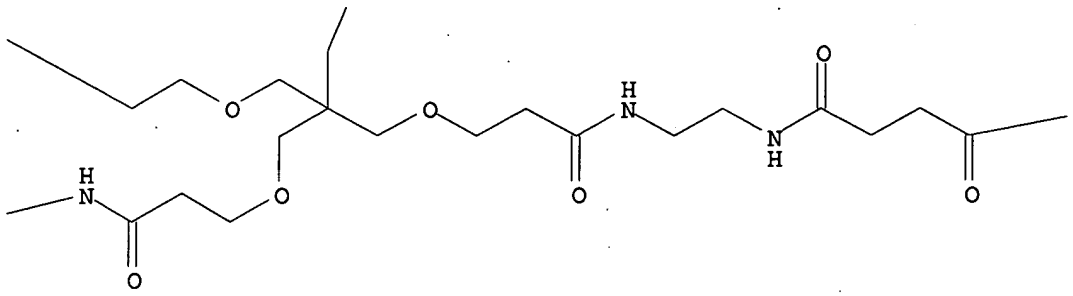
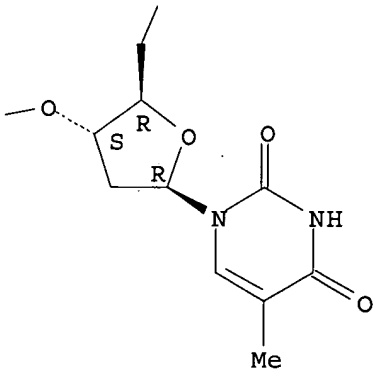
N
H
MeO
Ph
OMe
OMe
O
Ph
OMe

PAGE 2-B



PAGE 2-C

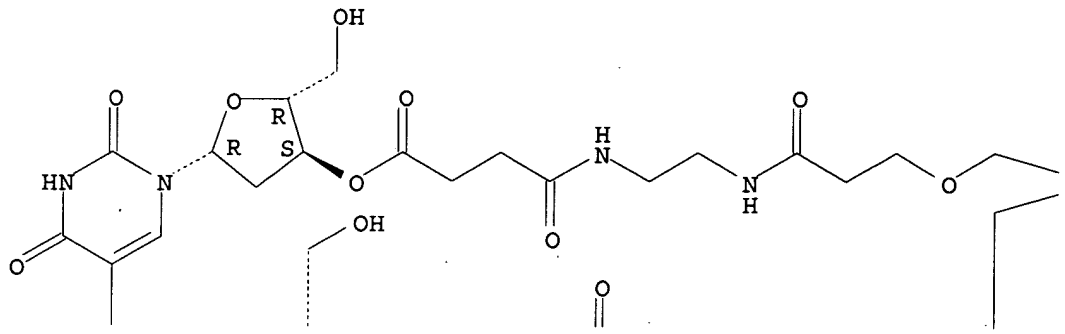


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

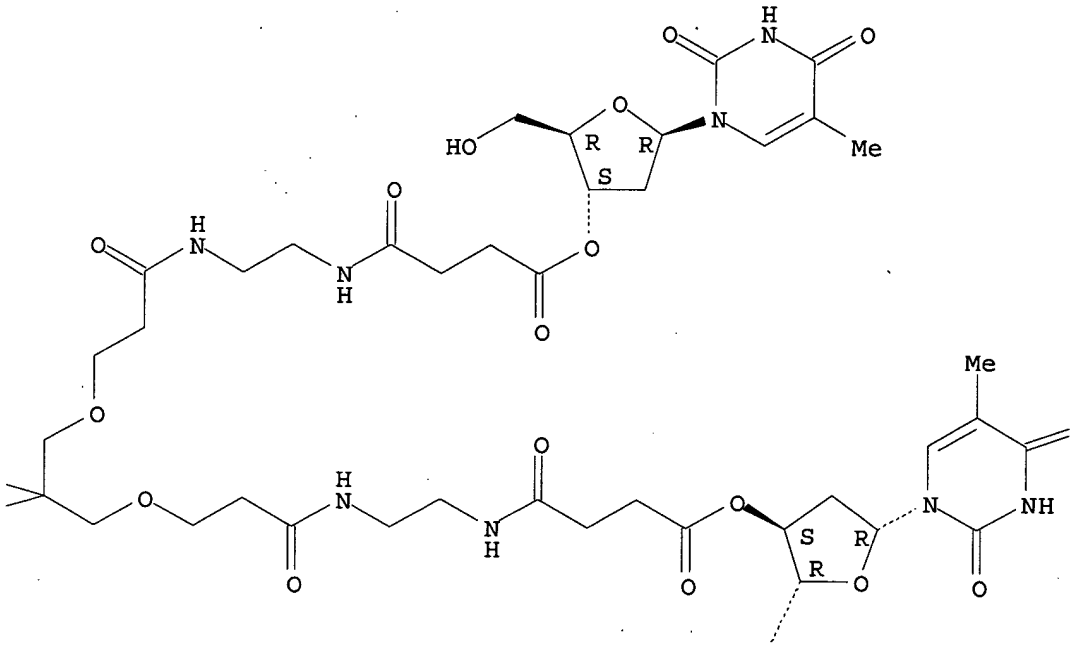
L3 6 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Thymidine, 3',3'''-[14,14-[[3-[[2-[(3-carboxy-1-oxopropyl)amino]ethyl]amino]-3-oxopropoxy]methyl]-4,9,19,24-tetraoxo-12,16-dioxa-5,8,20,23-tetraazaheptacosanedioate], 3',3'''-diester with thymidine (9CI)
MF C81 H116 N16 O36

Absolute stereochemistry.

PAGE 1-A



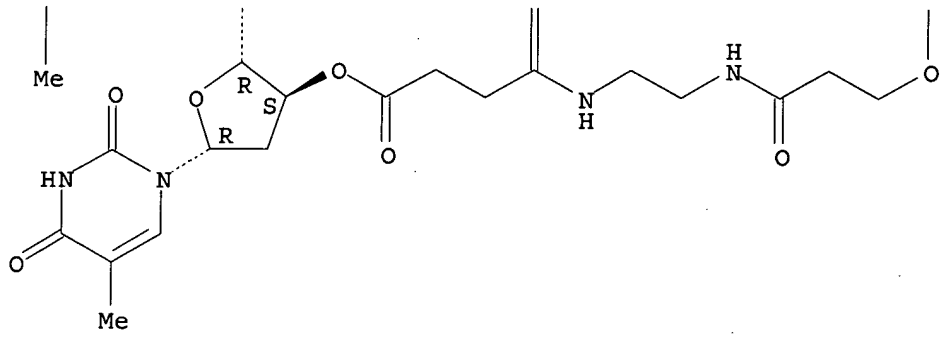
PAGE 1-B



PAGE 1-C

=O

PAGE 2-A

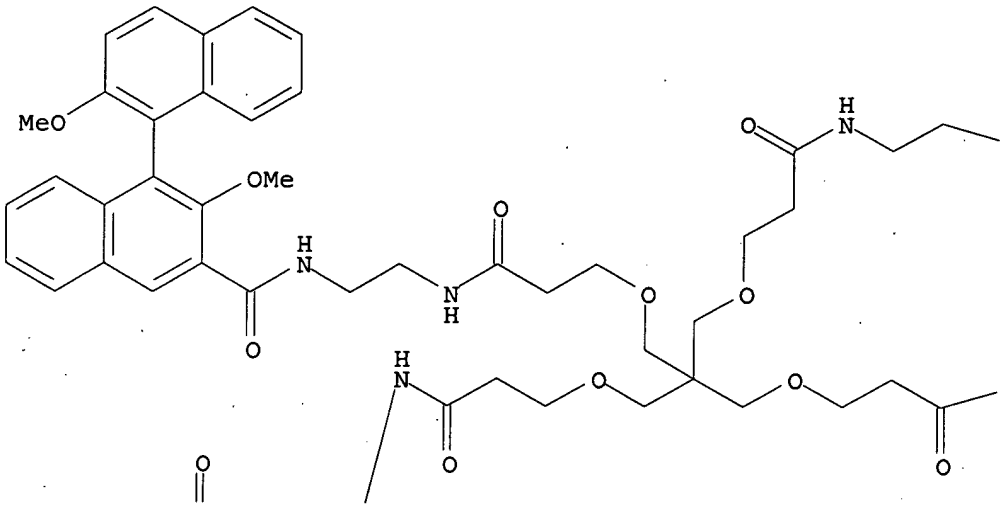


PAGE 2-B

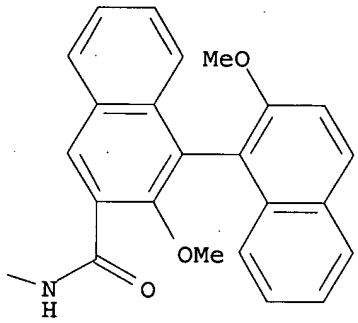
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

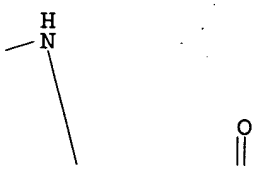
L3 6 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN [1,1'-Binaphthalene]-3-carboxamide, N,N'-[9,9-bis[[3-[[2-[[[(1S)-2,2'-dimethoxy[1,1'-binaphthalen]-3-yl]carbonyl]amino]ethyl]amino]-3-oxopropoxy]methyl]-4,14-dioxo-7,11-dioxa-3,15-diazaheptadecane-1,17-diyl]bis[2,2'-dimethoxy-, (1S,1''S)- (9CI)
MF C117 H116 N8 O20

PAGE 1-A

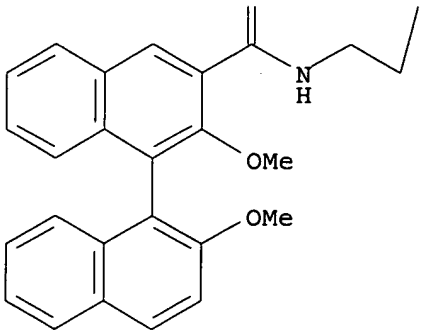


PAGE 1-B

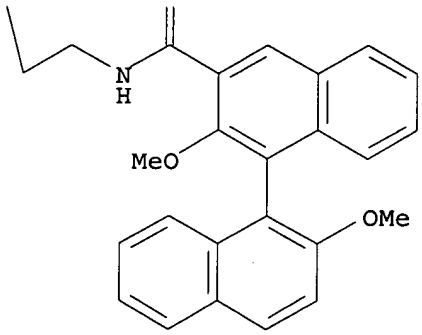




PAGE 2-A



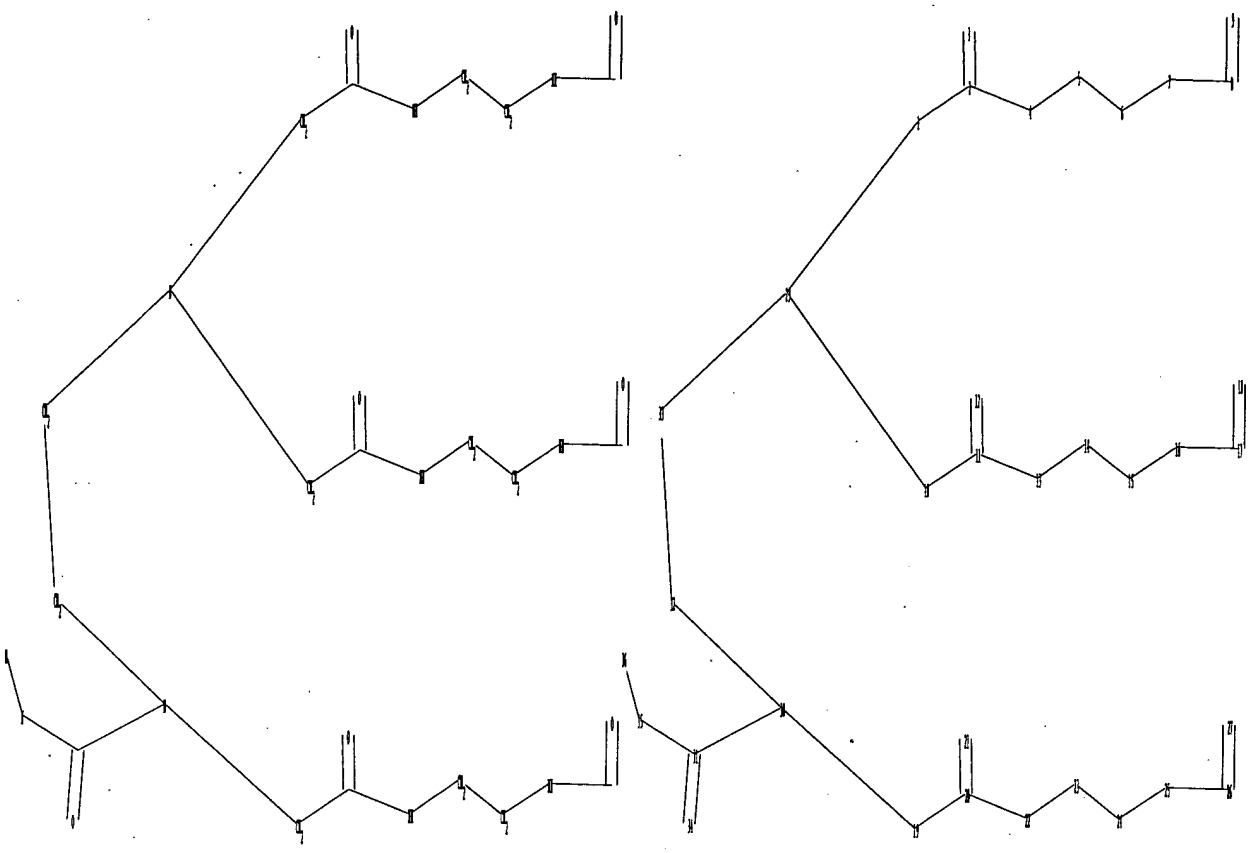
PAGE 2-B



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=>
Uploading C:\Program Files\Stnexp\Queries\10780447d.str



chain nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 29 30 31 32 33 34 35 36
chain bonds :
1-2 1-29 2-3 2-4 4-5 5-6 6-7 7-8 8-9 10-11 10-29 11-12 11-13 13-14
14-15 15-16 16-17 17-18 19-20 19-30 20-21 20-22 22-23 23-24 24-25 25-26
26-27 29-33 30-31
30-32 31-34 31-35 32-33 35-36
exact/norm bonds :
2-3 2-4 7-8 8-9 11-12 11-13 16-17 17-18 20-21 20-22 25-26 26-27 30-31
31-34 31-35
exact bonds :
1-2 1-29 4-5 5-6 6-7 10-11 10-29 13-14 14-15 15-16 19-20 19-30 22-23
23-24 24-25 29-33 30-32 32-33 35-36

G1:H

Match level :
1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:CLASS
10:CLASS 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS
18:CLASS 19:CLASS
20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 26:CLASS 27:CLASS
29:CLASS 30:CLASS
31:CLASS 32:CLASS 33:CLASS 34:CLASS 35:CLASS 36:CLASS

L4 STRUCTURE UPLOADED

```
=> d l4
L4 HAS NO ANSWERS
L4              STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY -  AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.


=> s l4 sss sam
SAMPLE SEARCH INITIATED 16:11:12 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -       33 TO ITERATE

100.0% PROCESSED       33 ITERATIONS                                 0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          316 TO     1004
PROJECTED ANSWERS:               0 TO        0

L5            0 SEA SSS SAM L4

=> s l4 sss full
FULL SEARCH INITIATED 16:11:16 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -      656 TO ITERATE

100.0% PROCESSED      656 ITERATIONS                                 0 ANSWERS
SEARCH TIME: 00.00.01

L6            0 SEA SSS FUL L4

=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY    SESSION
FULL ESTIMATED COST                                  333.88     334.09

FILE 'CAPLUS' ENTERED AT 16:11:25 ON 01 NOV 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE COVERS 1907 - 1 Nov 2006  VOL 145 ISS 19
FILE LAST UPDATED: 31 Oct 2006  (20061031/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/infopolicy.html

=> s l3
L7            6 L3
```

```
=> s l7 and (fusogen? or membrane or (drug(w)delivery) or pharmacokinetic or
transfec? or endocytosis)
          1620 FUSOGEN?
        722797 MEMBRANE
        681675 DRUG
        246562 DELIVERY
        174558 DRUG(W)DELIVERY
         47570 PHARMACOKINETIC
         97813 TRANSFEC?
         16622 ENDOCYTOSIS
L8           2 L7 AND (FUSOGEN? OR MEMBRANE OR (DRUG(W)DELIVERY) OR PHARMACOKIN
               ETIC OR TRANSFEC? OR ENDOCYTOSIS)

=> d l8 1-2 ti abs bib

L8   ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Dendrimers as molecular translocators
AB   Transport mols. include a dendrimer and a biol. active mol.  The dendrimer
     of such transport mols. includes at least one guanidine group, at least
     one protonated guanidine group, at least one protected guanidine group, at
     least one amidine group, at least one protonated amidine group, at least
     one protected amidine group, at least one ureido group, at least one
     protonated ureido group, at least one protected ureido group, at least one
     thiorueido group, at least one protonated thioureido group, or at least
     one protected thioureido group.  The biol. active mol. is bonded to the
     dendrimer.  A method of increasing the bioavailability of a drug includes
     bonding the drug to a dendrimer of the invention.
AN   2004:80754  CAPLUS <<LOGINID::20061101>>
DN   140:146993
TI   Dendrimers as molecular translocators
IN   Goodman, Murray; Seong, Churl Min; Harms, Guido; Min, Changhee; Choi,
     Byung Hyune; Chung, Hyun-ho
PA   The Regents of the University of California, USA; Lg Life Sciences
SO   PCT Int. Appl., 192 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 2
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    --------------------   --------
PI   WO 2004009666        A2    20040129    WO 2003-US22772        20030718
     WO 2004009666        A3    20040610
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
             TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
             FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     AU 2003263793        A1    20040209    AU 2003-263793         20030718
PRAI US 2002-397319P      P     20020719
     WO 2003-US22772      W     20030718

L8   ANSWER 2 OF 2  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Dendrimers as molecular translocators
AB   Transport mols. include a dendrimer and a biol. active mol.  The dendrimer
     of such transport mols. includes at least one guanidine group, at least
     one protonated guanidine group, at least one protected guanidine group, at
     least one amidine group, at least one protonated amidine group, at least
     one protected amidine group, at least one ureido group, at least one
```

protonated ureido group, at least one protected ureido group, at least one thioureido group, at least one protonated thioureido group, or at least one protected thioureido group. The biol. active mol. is bonded to the dendrimer. A method of increasing the bioavailability of a drug includes bonding the drug to a dendrimer of the invention.

AN 2004:80753 CAPLUS <<LOGINID::20061101>>
DN 140:146992
TI Dendrimers as molecular translocators
IN Goodman, Murray; Seong, Churl Min; Harms, Guido
PA The Regents of the University of California, USA
SO PCT Int. Appl., 208 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004009665	A2	20040129	WO 2003-US22771	20030718
	WO 2004009665	A3	20040624		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2493674	AA	20040129	CA 2003-2493674	20030718
	AU 2003254066	A1	20040209	AU 2003-254066	20030718
	EP 1545462	A2	20050629	EP 2003-765852	20030718
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	US 2006216265	A1	20060928	US 2006-522128	20060227
PRAI	US 2002-397319P	P	20020719		
	WO 2003-US22771	W	20030718		

=> d l7 1-6 ti

L7 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
TI Dendrimers as molecular translocators

L7 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
TI Dendrimers as molecular translocators

L7 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
TI Dendrimers with inherently axially chiral units

L7 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
TI Solution phase biopolymer synthesis of oligodeoxyribonucleotides using multifunctional liquid phase carriers

L7 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
TI Synthesis of new liquid phase carriers for use in large scale oligodeoxyribonucleotide synthesis in solution

L7 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
TI N-hydroxyamide-containing heterocycles. Part 5. Synthesis of novel hexadentate ligands composed of N-hydroxy-2(1H)-pyrazinone, aliphatic diamine, and 1,1,1-tris(carboxyethoxymethyl)ethane, and properties of their ferric complexes

=> d l7 3 4 5 ti abs bib

L7 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
TI Dendrimers with inherently axially chiral units
AB We have designed and successfully synthesized dendrimers with axially chiral units in the interior structure. Starting from chiral 2,2'-dimethoxy-1,1'-binaphthalene building blocks and from the four-directional initiator cores the dendritic homochiral and heterochiral oligomers 9-16 were prepared Using the [ϕ]D and Δ.vepsiln. values of monomers 2 and 4, we calculated [ϕ]D and Δ.vepsiln. values for dendrons 11, 13, and dendrimers 9, 10, 15 and 16. Although the observed molar optical rotation [ϕ]D of the dendrimers agrees relatively well with the calculated values, the CD measurements of all the dendrimers in THF and CH2Cl2, except that of heterochiral dendrimer 16 in THF, were significantly different from the calculated values. The intensive hypochromism of the dendrimers (between 37-59% in THF) and the agreement between the calculated and observed Δ.vepsiln. values of the dendrons (between 14 and 6% in THF) led to the assumption that the hypochromic effect is caused by intramol. interactions. From the NMR measurements it was proved that in the homochiral dendrimer, the N-H groups of the amides can form intramol. hydrogen bonds that in CHCl3, with the help of the axially chiral moieties, cause a different conformation of the mol. than in the diastereomeric dendrimer.
AN 2000:246986 CAPLUS <<LOGINID::20061101>>
DN 133:105420
TI Dendrimers with inherently axially chiral units
AU Lellek, Vit; Stibor, Ivan
CS Department of Organic Chemistry, University of Zurich, Zurich, CH-8057, Switz.
SO Journal of Materials Chemistry (2000), 10(5), 1061-1073
CODEN: JMACEP; ISSN: 0959-9428
PB Royal Society of Chemistry
DT Journal
LA English
RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

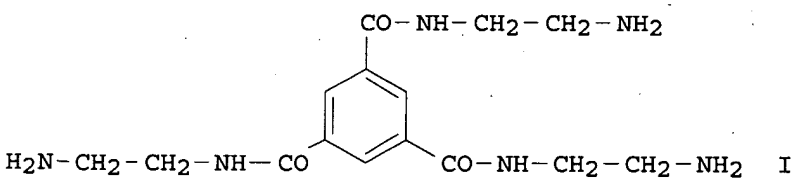
L7 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
TI Solution phase biopolymer synthesis of oligodeoxyribonucleotides using multifunctional liquid phase carriers
AB Multifunctional liquid phase carriers (LPCs) and methods of using LPCs for the preparation of biopolymers are provided. The LPCs are highly sym. compds. that possess more than two points of attachment for biopolymer synthesis. The LPCs have the formula Sp(X1)n, where Sp is a highly sym. moiety such that all X1 groups are equivalent X1 is a functional group that is suitable for biopolymer synthesis, including OH, SH, NH2, COOH and the like. Biopolymers that may be produced using the methods provided include oligonucleotides, peptides, protein nucleic acids (PNAs) and oligosaccharides. Analogs of the biopolymers may also be prepared using the methods. Thus decamer d(GACCGGCAGT) was prepared using multifunctional liquid phase carriers.
AN 1999:708779 CAPLUS <<LOGINID::20061101>>
DN 131:351620
TI Solution phase biopolymer synthesis of oligodeoxyribonucleotides using multifunctional liquid phase carriers
IN Koster, Hubert; Worl, Ralf
PA USA
SO PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	WO 9955718	A2	19991104	WO 1999-US8939	19990426
	WO 9955718	A3	19991216		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002016451	A1	20020207	US 1998-67337	19980427
	US 7094943	B2	20060822		
	AU 9936643	A1	19991116	AU 1999-36643	19990426
	EP 1073668	A2	20010207	EP 1999-918819	19990426
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 2002007048	A1	20020117	US 2000-484484	20000118
	US 7038103	B2	20060502		
PRAI	US 1998-67337	A	19980427		
	WO 1999-US8939	W	19990426		

L7 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

TI Synthesis of new liquid phase carriers for use in large scale oligodeoxyribonucleotide synthesis in solution

GI



I

AB The synthesis of multifunctional sym. primary amines, e.g. I, and the covalent binding of 5'-O-dimethoxytrityl-deoxynucleoside derivs. to their amino groups is described. Different strategies for dedimethoxytritylation including the use of strong acidic ion exchangers or protic acids and modified silica gels and/or gel permeation chromatog. are developed. The resulting liquid phase carriers are suitable for large scale oligodeoxyribonucleotide synthesis in solution using phosphoramidites and gel permeation chromatog. for fast isolation of intermediates.

AN 1999:176579 CAPLUS <<LOGINID::20061101>>

DN 130:267701

TI Synthesis of new liquid phase carriers for use in large scale oligodeoxyribonucleotide synthesis in solution

AU Worl, Ralf; Koster, Hubert

CS Faculty of Chemistry, Department of Biochemistry and Molecular Biology, University of Hamburg, Hamburg, D-20146, Germany

SO Tetrahedron (1999), 55(10), 2941-2956
CODEN: TETRAB; ISSN: 0040-4020

PB Elsevier Science Ltd.

DT Journal

LA English

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
=> s (cluster(w)glycoside) and galactosamine
           2   FILE CAPLUS
           1   FILE ESBIOBASE
           6   FILE GENBANK
  35 FILES SEARCHED...
           1   FILE SCISEARCH
           5   FILE USPATFULL
           2   FILE USPAT2

   6 FILES HAVE ONE OR MORE ANSWERS,   68 FILES SEARCHED IN STNINDEX

L9   QUE (CLUSTER(W) GLYCOSIDE) AND GALACTOSAMINE

=> file uspatfull
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     1.22     366.94

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                     0.00      -3.75

FILE 'USPATFULL' ENTERED AT 17:21:37 ON 01 NOV 2006
CA INDEXING COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 31 Oct 2006 (20061031/PD)
FILE LAST UPDATED: 31 Oct 2006 (20061031/ED)
HIGHEST GRANTED PATENT NUMBER: US7131145
HIGHEST APPLICATION PUBLICATION NUMBER: US2006242744
CA INDEXING IS CURRENT THROUGH 31 Oct 2006 (20061031/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 31 Oct 2006 (20061031/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2006
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2006


=> s (cluster(w)glycoside) and galactosamine
         70448 CLUSTER
          9592 GLYCOSIDE
             8 CLUSTER(W)GLYCOSIDE
          4061 GALACTOSAMINE
L10          5 (CLUSTER(W)GLYCOSIDE) AND GALACTOSAMINE

=> d l10 1-5 ti

L10  ANSWER 1 OF 5  USPATFULL on STN
TI     OLIGOMERS CONTAINING N-ACETYL GLUCOSAMINE (NAG)

L10  ANSWER 2 OF 5  USPATFULL on STN
TI     Block copolymers and preparation thereof

L10  ANSWER 3 OF 5  USPATFULL on STN
TI     Method of immobilization of clusters of ligands on polymer surface and
       use in cell engineering

L10  ANSWER 4 OF 5  USPATFULL on STN
TI     Polymerizable monomers and process of preparation thereof

L10  ANSWER 5 OF 5  USPATFULL on STN
TI     Triantennary cluster glycosides, their preparation and use


=> d l10 1 4 5 ti abs bib

L10  ANSWER 1 OF 5  USPATFULL on STN
```

TI OLIGOMERS CONTAINING N-ACETYL GLUCOSAMINE (NAG)
AB Functional polyvalent oligomer for applications in medicine and biotechnology are disclosed. These oligomers have the formula (1) ##STR1## wherein R is H, CH.sub.3, C.sub.2H.sub.5, R1, is H, NH2, OH, COOH, X is N-Acetyl Glucosamine mannose, galactose and sialic acid, fructose, ribulose, erythrolose, xylulose, psicose, sorbose, tagatose, glucopyranose, fructose, deoxyribose , galactosamine, sucrose, lactose, isomaltose, maltos, cellobiose, cellulose and amylose, Y is H, COOH, OH or NH2, and n is from 3 to 50. The present invention also relates to synthesis of such oligomeric ligands. The method of synthesis of the present invention for oligomerization can be--applied to other ligands such as sialic acid, mannose and galactose and can--be used for the prevention of infections.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2005:255828 USPATFULL
TI OLIGOMERS CONTAINING N-ACETYL GLUCOSAMINE (NAG)
IN Kulkarni, Mohan Gopalkrishna, Pune, INDIA
Khandare, Jayant Jagannath, Pune, INDIA
PA Council of Scientific and Industrial Research (non-U.S. corporation)
PI US 2005222326 A1 20051006
US 6977285 B2 20051220
AI US 2004-812838 A1 20040330 (10)
DT Utility
FS APPLICATION
LREP LADAS & PARRY, 26 WEST 61ST STREET, NEW YORK, NY, 10023, US
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 669
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 4 OF 5 USPATFULL on STN
TI Polymerizable monomers and process of preparation thereof
AB The present invention relates to polymerizable monomers for applications in medicine and biotechnology and synthesis thereof. The polymerizable ligands containing NAcetyl Glucosamine bind more strongly to lysozyme than NAG itself. The binding is further enhanced when a spacer arm, for example 6-Amino Caproic Acid (6-ACA) is introduced in the structure. The conjugated ligands could be used for prevention and treatment of bacterial and viral infections Moreover these ligands can be coupled to stimuli sensitive polymers and used for the recovery of biomolecules The methodology can be extended to other ligands such as sialic acid and the corresponding polymers used for preventil1g influenza and lor rotavirus infections

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 2004:248302 USPATFULL
TI Polymerizable monomers and process of preparation thereof
IN Kulkarni, Mohan Gopalkrishna, Maharashtra, INDIA
Khandare, Jayant Jagannath, Maharashtra, INDIA
PI US 2004192905 A1 20040930
AI US 2003-402256 A1 20030331 (10)
DT Utility
FS APPLICATION
LREP NIXON & VANDERHYE, PC, 1100 N GLEBE ROAD, 8TH FLOOR, ARLINGTON, VA, 22201-4714
CLMN Number of Claims: 22
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 703
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 5 OF 5 USPATFULL on STN

```
TI      Triantennary cluster glycosides, their preparation and use
AB      Triantennary cluster glycoside, wherein each
        glycoside residue is attached to the branching point of the cluster by a
        spacer of a long, flexible, hydrophilic chain comprising at least 4
        atoms in the chain. The glyciside spacer preferably comprises at least
        two hydrophilic groups. Use of the triantennary cluster
        glycoside in pharmaceutical preparations, for instance
        hypolipidemic medicines.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN      1999:37084  USPATFULL
TI      Triantennary cluster glycosides, their preparation and use
IN      Biessen, Ericus Anna Leonardus, Leiden, Netherlands
        van Berkel, Theodorus Josephus Cornelis, Haarlem, Netherlands
        van Boom, Jacobus Hubertus, Voorschoten, Netherlands
PA      Rijksuniversiteit te Leiden, AV Leiden, Netherlands (non-U.S.
        corporation)
        Nederlandse Hartstichting, The Hague, Netherlands (non-U.S. corporation)
PI      US 5885968              19990323
        WO 9404545  19940303
AI      US 1995-382022          19950504 (8)
        WO 1993-NL169           19930811
                                19950504  PCT 371 date
                                19950504  PCT 102(e) date
PRAI    NL 1992-1440        19920811
DT      Utility
FS      Granted
EXNAM   Primary Examiner: Peselev, Elli
LREP    Hoffmann & Baron, LLP
CLMN    Number of Claims: 23
ECL     Exemplary Claim: 1,16
DRWN    21 Drawing Figure(s); 16 Drawing Page(s)
LN.CNT 1210
CAS INDEXING IS AVAILABLE FOR THIS PATENT.


=> index bioscience
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                          ENTRY     SESSION
FULL ESTIMATED COST                                        8.86      375.80

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)              SINCE FILE      TOTAL
                                                          ENTRY     SESSION
CA SUBSCRIBER PRICE                                        0.00       -3.75

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
       AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
       CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
       DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 17:22:41 ON 01 NOV 2006

68 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s (cluster(w)glycoside) and (N-acetylgalactosamine)
          4    FILE BIOSIS
          1    FILE BIOTECHNO
          7    FILE CAPLUS
          1    FILE DDFU
          1    FILE DRUGU
          4    FILE EMBASE
          4    FILE ESBIOBASE
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  30 FILES SEARCHED...
         3   FILE GENBANK
         4   FILE MEDLINE
         1   FILE PASCAL
         7   FILE SCISEARCH
         1   FILE USPATFULL
         1   FILE USPAT2
  66 FILES SEARCHED...

  13 FILES HAVE ONE OR MORE ANSWERS,   68 FILES SEARCHED IN STNINDEX

L11  QUE (CLUSTER(W) GLYCOSIDE) AND (N-ACETYLGALACTOSAMINE)

=> file biosis caplus embase medline
COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       1.22     377.02

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)            SINCE FILE      TOTAL
                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                       0.00      -3.75

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FILE 'MEDLINE' ENTERED AT 17:23:49 ON 01 NOV 2006

=> s (cluster(w)glycoside) and (N-acetylgalactosamine)
L12          19 (CLUSTER(W) GLYCOSIDE) AND (N-ACETYLGALACTOSAMINE)

=> dup rem l12
PROCESSING COMPLETED FOR L12
L13           7 DUP REM L12 (12 DUPLICATES REMOVED)

=> d l13 1-7 ti

L13  ANSWER 1 OF 7  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
     DUPLICATE 1
TI   Design and synthesis of novel N-acetylgalactosamine
     -terminated glycolipids for targeting of lipoproteins to the hepatic
     asialoglycoprotein receptor.

L13  ANSWER 2 OF 7  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Ligands of the asialoglycoprotein receptor for targeted gene delivery,
     part 1: Synthesis of and binding studies with biotinylated cluster
     glycosides containing N-acetylgalactosamine

L13  ANSWER 3 OF 7  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
     DUPLICATE 2
TI   Determination of the upper size limit for uptake and processing of ligands
     by the asialoglycoprotein receptor on hepatocytes in vitro and in vivo.

L13  ANSWER 4 OF 7  CAPLUS  COPYRIGHT 2006 ACS on STN  DUPLICATE 3
TI   Facile solid-phase synthesis of YEE(ah-GalNAc)3, a ligand with known high
     affinity for the asialoglycoprotein receptor
```

L13 ANSWER 5 OF 7 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 4
TI Facile synthesis of a high-affinity ligand for mammalian hepatic lectin containing three terminal N-acetylgalactosamine residues.

L13 ANSWER 6 OF 7 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 5
TI Stepwise synthesis of a GalNAc-containing cluster glycoside ligand of the asialoglycoprotein receptor.

L13 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
TI Binding and endocytosis of cluster glycosides by rabbit hepatocytes. Evidence for a short-circuit pathway that does not lead to degradation

=> d l13 1 2 3 5 ti abs bib

L13 ANSWER 1 OF 7 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 1
TI Design and synthesis of novel N-acetylgalactosamine -terminated glycolipids for targeting of lipoproteins to the hepatic asialoglycoprotein receptor.
AB A novel glycolipid has been prepared that contains a cluster glycoside with an unusually high affinity for the asialoglycoprotein receptor (ASGPr) and a bile acid moiety that mediates stable incorporation into lipidic particles. The glycolipid spontaneously associated with low-density lipoproteins (LDL) and high-density lipoproteins (HDL) within human and murine plasma, and loading of lipoproteins with this glycolipid resulted in an efficient dose-dependent recognition and uptake of LDL and HDL by the liver (and not by spleen) upon intravenous injection into wild-type mice. Preinjection with asialoorosomucoid largely inhibited the uptake, establishing that both HDL and LDL were selectively recognized and processed by the ASGPr on liver parenchymal cells. Finally, repeated intravenous administration of the glycolipid to hyperlipidemic LDL receptor-deficient mice evoked an efficient and persistent cholesterol-lowering effect. These results indicate that the glycolipid may be a promising alternative for the treatment of hyperlipidemic patients who do not respond sufficiently to current cholesterol-lowering therapies.
AN 2005:63481 BIOSIS
DN PREV200500062274
TI Design and synthesis of novel N-acetylgalactosamine -terminated glycolipids for targeting of lipoproteins to the hepatic asialoglycoprotein receptor.
AU Rensen, Patrick C. N. [Reprint Author]; van Leeuwen, Steven H.; Sliedregt, Leo A. J. M.; Van Berkel, Theo J. C.; Biessen, Erik A. L.
CS Dept Gen Internal Med, LUMC, POB 2215, NL-2301 CE, Leiden, Netherlands
pcn.rensen@pg.tno.nl
SO Journal of Medicinal Chemistry, (November 4 2004) Vol. 47, No. 23, pp. 5798-5808. print.
ISSN: 0022-2623 (ISSN print).
DT Article
LA English
ED Entered STN: 9 Feb 2005
Last Updated on STN: 9 Feb 2005

L13 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
TI Ligands of the asialoglycoprotein receptor for targeted gene delivery, part 1: Synthesis of and binding studies with biotinylated cluster glycosides containing N-acetylgalactosamine
AB In order to develop the non-viral Bioplex vector system for targeted delivery of genes to hepatocytes, we have evaluated the structure-function relationship for a number of synthetic ligands designed for specific

interaction with the hepatic lectin ASGPr. Biotinylated ligand derivs. containing two, three or six beta-linked N-acetylgalactosamine (GalNAc) residues were synthesized, bound to fluorescent-labeled streptavidin and tested for binding and uptake to HepG2 cells using flow cytometry anal. (FACS). Uptake efficiency increased with number of displayed GalNAc units per ligand, in a receptor dependent manner. Thus, a derivative displaying six GalNAc units showed the highest uptake efficacy both in terms of number of internalizing cells and increased amount of material taken up per each cell. However, this higher efficiency was shown to be due not so much to higher number of sugar units, but to higher accessibility of the sugar units for interaction with the receptor (longer spacer). Improving the flexibility and accessibility of a trimeric GalNAc ligand through use of a longer spacer markedly influenced the uptake efficiency, while increasing the number of GalNAc units per ligand above three only provided a minor contribution to the overall affinity. We hereby report the details of the chemical synthesis of the ligands and the structure-function studies in vitro.

AN 2004:840783 CAPLUS
DN 143:153598
TI Ligands of the asialoglycoprotein receptor for targeted gene delivery, part 1: Synthesis of and binding studies with biotinylated cluster glycosides containing N-acetylgalactosamine
AU Westerlind, Ulrika; Westman, Jacob; Toernquist, Elisabeth; Smith, C. I. Edvard; Oscarson, Stefan; Lahmann, Martina; Norberg, Thomas
CS Department of Chemistry, Swedish University of Agricultural Sciences, Uppsala, S-750 07, Swed.
SO Glycoconjugate Journal (2004), 21(5), 227-241
CODEN: GLJOEW; ISSN: 0282-0080
PB Kluwer Academic Publishers
DT Journal
LA English
OS CASREACT 143:153598
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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DUPLICATE 2
TI Determination of the upper size limit for uptake and processing of ligands by the asialoglycoprotein receptor on hepatocytes in vitro and in vivo.
AB The asialoglycoprotein receptor (ASGPr) on hepatocytes plays a role in the clearance of desialylated proteins from the serum. Although its sugar preference (N-acetylgalactosamine
(GaINAc)mchgtgalactose) and the effects of ligand valency
(tetraantennary>triantennarymchgtdiantennarymchgtmonoantennary) and sugar spacing (20 ANGmchgt10 ANGmchgt4 ANG) are well documented, the effect of particle size on recognition and uptake of ligands by the receptor is poorly defined. In the present study, we assessed the maximum ligand size that still allows effective processing by the ASGPr of mouse hepatocytes in vivo and in vitro. Hereto, we synthesized a novel glycolipid, which possesses a highly hydrophobic steroid moiety for stable incorporation into liposomes, and a triantennary GaINAc3-terminated cluster glycoside with a high nanomolar affinity (2 nM) for the ASGPr. Incorporation of the glycolipid into small (30 nm) (3H)cholesteryl oleate-labeled long circulating liposomes (1-50%, w/w) caused a concentration-dependent increase in particle clearance that was liver-specific (reaching 85+-7% of the injected dose at 30 min after injection) and mediated by the ASGPr on hepatocytes, as shown by competition studies with asialoorosomucoid in vivo. By using glycolipid-laden liposomes of various sizes between 30 and 90 nm, it was demonstrated that particles with a diameter of >70 nm could no longer be recognized and processed by the ASGPr in vivo. This threshold size for effective uptake was not related to the physical barrier raised by the fenestrated sinusoidal endothelium, which shields hepatocytes from the circulation, because similar results were obtained by studying the uptake

of liposomes on isolated mouse hepatocytes in vitro. From these data we conclude that in addition to the species, valency, and orientation of sugar residues, size is also an important determinant for effective recognition and processing of substrates by the ASGPr. Therefore, these data have important implications for the design of ASGPr-specific carriers that are aimed at hepatocyte-directed delivery of drugs and genes.

AN 2001:514003 BIOSIS
DN PREV200100514003
TI Determination of the upper size limit for uptake and processing of ligands by the asialoglycoprotein receptor on hepatocytes in vitro and in vivo.
AU Rensen, Patrick C. N. [Reprint author]; Sliedregt, Leo A. J. M.; Ferns, Michiel; Kieviet, Erwin; van Rossenberg, Sabine M. W.; van Leeuwen, Steven H.; van Berkel, Theo J. C.; Biessen, Erik A. L.
CS Div. of Biopharmaceutics, Leiden/Amsterdam Center for Drug Research, Sylvius Laboratory, University of Leiden, 2300 RA, Leiden, Netherlands p.rensen@lacdr.leidenuniv.nl
SO Journal of Biological Chemistry, (October 5, 2001) Vol. 276, No. 40, pp. 37577-37584. print.
CODEN: JBCHA3. ISSN: 0021-9258.
DT Article
LA English
ED Entered STN: 7 Nov 2001
Last Updated on STN: 23 Feb 2002

L13 ANSWER 5 OF 7 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 4
TI Facile synthesis of a high-affinity ligand for mammalian hepatic lectin containing three terminal N-acetylgalactosamine residues.
AB A simple cluster glycoside containing three residues of N-acetylgalactosamine with proper inter-residual distances can be a high-affinity ligand for asialoglycoprotein receptor of mammalian liver. YEE(ahGalNAc)-3 (Lee, R. T., and Lee, Y. C. (1987) Glycoconjugate J. 4, 317-328) is such a ligand having a K-d in the subnanomolar range, and this high-affinity ligand has been successfully utilized in the delivery of gene to the parenchymal cells of the liver (Merwin, J. R., Noell, G. S., Thomas, W. L., Chiou, H. C., DeRome, M. E., McKee, T. D., Spitalny, G. L., and Findeis, M. A. (1994) Bioconjugate Chemical 5, 612-620; Hangeland, J. J., Levis, J. T., Lee, Y. C., and Ts'o, P. O. P. (1995) Bioconjugate Chemical 6, 695-701). Reported here is a synthetic procedure for an equally effective, homologous trivalent ligand, YDD(G-ah-GalNAc)-3. The advantage offered by this new cluster glycoside is that the synthetic scheme accomplishes purification of reaction intermediates and the product without chromatographic separations. This greatly simplifies the procedure and allows scale-up of the operation at reduced cost of production.
AN 1997:482611 BIOSIS
DN PREV199799781814
TI Facile synthesis of a high-affinity ligand for mammalian hepatic lectin containing three terminal N-acetylgalactosamine residues.
AU Lee, Reiko T.; Lee, Yuan C. [Reprint author]
CS Dep. Biol., Johns Hopkins Univ., Baltimore, MD 21218, USA
SO Bioconjugate Chemistry, (1997) Vol. 8, No. 5, pp. 762-765.
CODEN: BCCHES. ISSN: 1043-1802.
DT Article
LA English
ED Entered STN: 7 Nov 1997
Last Updated on STN: 7 Nov 1997